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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/982,206

10/19/2001

Takashi Ohta

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8010

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7590

03/17/2004

JACOBSON HOLMAN PLLC  
400 SEVENTH STREET N.W.  
SUITE 600  
WASHINGTON, DC 20004

EXAMINER

LEE, EDMUND H

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/982,206

Applicant(s)

OHTA ET AL.

Examiner

EDMUND H. LEE

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1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3 and 4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Repella (USPN 4705277) in view of Butler et al (USPN 4822058) and Tadic et al (USPN 5618488). In regard to claim 3, Repella teaches the basic claimed process including a process for making a sealing device having a sealing lip with a frustoconical air-side surface and a frustoconical oil-side surface and having a helical portion on the air-side surface (fig 4); preparing a sealing device having a rigid annular casting, a molded elastomeric member bonded to the casing and a sealing lip defined by a frustoconical air-side surface and a frustoconical oil-side surface (fig 4). However, Repella does not teach radiating a radiation ray on the frustoconical surface to form the harder portion. Butler et al teach a sealing device having a sealing lip having a frustoconical air-side surface and a frustoconical oil-side surface and having a harder portion on the air-side surface (col 4, 65-col 5, ln 27; fig 12); and preparing a sealing device having a rigid annular casting, a molded elastomeric member bonded to the casing in one body and a sealing lip defined by a frustoconical air-side surface and a frustoconical oil-side surface (col 4, 65-col 5, ln 27; fig 12) --as a note, the sealing lip of Butler et al has interdisposed helical harder portions that are crosslinked and not decomposed; and forming the frustoconical air-side surface into concave shaped grooves and convex shaped ribs

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when the sealing device is in use with relative rotative movement between the sealing lip and a shaft, the convex shaped ribs having the hardness of the harder helical portion and the concave shaped grooves having the hardness of the sealing lip with each of the concave shaped grooves being located between adjacent ones of the convex shaped ribs, and the frustoconical air side surface being snugly fit against an outer periphery of the shaft when there is no relative rotative movement between the sealing lip and the shaft (fig 4)--as a note, this limitation is inherent with the sealing device of Butler et al because without this limitation the sealing device of Butler et al would not work. Tadic et al teach a method of manufacturing a seal having portions with different hardness (col 1, ln 37-40; col 2, lns 43-50); and producing the difference in hardness by radiating to crosslink (col 1, ln 37-40; col 2, lns 43-50). Repella, Butler et al, and Tadic et al are analogous with respect to forming polymeric seals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to harden the helical vanes of Repella as taught by Butler et al by the radiating method of Tadic et al in order to produce a diversified seal having enhanced effectiveness. In regard to claim 4, Repella teaches using a mask having a helical slit through which the etching means passes onto the frustoconical air-side surface to make the helical portions on the frustoconical air-side surface (col 3, lns 1-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mask of Repella to form the harder helical portions of Repella (modified) in order to accurately form the portions.

3. Applicant's arguments filed 11/26/03 have been fully considered but they are not persuasive. Applicant's arguments are misplaced because one cannot show

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nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In regard to applicant's arguments concerning Butler et al, the production of concave grooves and convex ribs is inherent to the sealing device of Butler et al. The sealing device of Butler et al would not work without the production of the grooves and ribs.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDMUND H. LEE whose telephone number is 571.272.1204. The examiner can normally be reached on **MONDAY-THURSDAY FROM 9AM-4PM**.

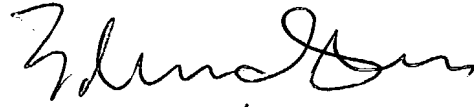
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571.272.1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EHL

EDMUND H. LEE  
Primary Examiner  
Art Unit 1732

  
3/15/04